

These observations, combined with any other set taken under equally favourable circumstances in this country, would suffice to establish the fact that *Vulcan* did not pass across the solar disk whilst the Sun was above our horizon from the 21st to the 23rd of March 1877.

*Stonyhurst Observatory,  
1877, March 24.*

*Report of Examination of the Sun's Disk at Guildown, Guildford, on 21st, 22nd, and 23rd March 1877, for the suspected planet Vulcan, with a 3¼-in. Cooke Refractor. Huyghenian eye-pieces 20 and 50. Transit eye-piece about 40. By J. Rand Capron, Esq.*

*Wednesday, 21st March 1877.*

- 9 to 10. Frequent examinations. Sun spot, with group of much smaller ones, well seen near edge of Sun.
- 10 to 2. Very cloudy, occasional glimpses of Sun's disk through clouds.
- 2 to 4. Brighter, but still cloudy, allowing of examinations from time to time; practised photo-plates with larger telescope (8¼-inch reflector).

*Thursday, 22nd March.*

- 7.10. Sunrise in mist; small spot and faculæ seen on Sun's edge.
- 7.41. Less mist; spot plainer.
- 7.54. Mist breaking; Sun's limb sharp; spot and faculæ very distinct.
- 8.26. Still misty, but spot and faculæ well defined.
- 9.1. } Sun getting above mist, with bright disk.
- 9.33. }
- 10.12. }
- 10.47. Light misty clouds, but spot well seen.
- 11.0. } Sun quite bright.
- 11.35. }
- Four Kennett plates taken between 9.30 and 11.30 with reflector.
- 11.52. Sun clouded.
- 12.20. Kennett plate, No. 5.
- 12.50. Snow flakes seen crossing the Sun's disk; none fell below.
- 12.57. Snowdrift continued, and clouds came up.
- 2.26. Curious cloud shadows overhead.
- 2.39. Sun's reappearance with bright disk.

- 2.46. Kennett plate, No. 6. }  
 2.52. Ditto „ 7. } Small spot very close to Sun's  
 3.30. Ditto „ 8. } edge.  
 3.34. Ditto „ 9. }  
 Clouds and mist then came on.  
 5.25. Sun low ; disk clear.

*Friday, 23rd March.*

- 6.58. )  
 7.28. )  
 7.55. Sharp frost ; Sun rose in slight mist, which afterwards  
 8.7. got denser ; disk, however, well seen and quite clear.  
 8.47. )  
 9.30. )  
 10.0. )  
 10.18. Misty ; fine Sun halo.  
 10.30. Disk clear.  
 11.0. Mist ; wind freshening.  
 11.7. Disk clear.  
 11.38. Mist and wind ; clouds coming up.  
 11.50. Clearer again.  
 12.33. Bright gleam ; disk well seen and quite pure.  
 1.0. Glimpse among clouds.  
 1.45. Same.  
 1.48. Very bright glimpse.  
 2.52. Disk well seen through mist.  
 3.48. Same (with 20).  
 4.40. Sun in cloud and mist, but disk fairly seen with 20 ; wind  
 high.  
 5.10. Fine Sun halo and Sun set in clouds.

*Guildown, Guildford,  
 April 4, 1877.*

*Radiant Points of Shooting Stars. From Captain Tupman's  
 unreduced Observations 1869-71.*

By W. F. Denning, Esq., F.M.S.

(Communicated by A. C. Ranyard, Esq., M.A.)

The valuable observations of Shooting Stars by Captain Tupman in the years 1869-70-71, printed in 1873 for the British Association, contain a considerable number of meteor-paths that have not hitherto been reduced to their radiant points. Thus, between Jan. 21-Feb. 23 (1869) there are about 135, between Sept. 6-Oct. 13 (1869-71) 130, and between Dec. 12-23 (chiefly in 1869) 40 more, making about 300 altogether. These

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